

1879 (fruit), *G. W. Letterman s. n.*; creek-bottoms, Hot Springs, April 30, 1939, *D. Demaree 19027*; rocks in creek-bottoms, Magnet Cove, April 8, 1939, *D. Demaree 18856*; LOGAN: along bed of rocky branch, near Blue Mountain, May 11, 1924, *E. J. Palmer 24811*; PIKE: Prairie Creek, gravel bars, Murfreesboro, Sept. 29, 1932 (fruit), *D. Demaree 9381*; YELL: along stream 3.2 mi. west of Birta, May 4, 1940, *L. Hubricht B1800* (TYPE, Herb. Missouri Bot. Gard.). OKLAHOMA: MCCURTAIN: rocky creek-beds, Broken Bow State Park, May 16, 1936, *D. Demaree 12654*.

All the specimens cited are deposited in the herbarium of the Missouri Botanical Gardens, but duplicates of most presumably are to be found in other American herbaria.

Amsonia Hubrichtii strikingly recalls *A. illustris* by its habitat in rocky or gravelly creek-bottoms of the Ozark region; but the latter, of course, has much broader leaves and externally pubescent corollas. Its closest relative apparently is the Ozark phase of *A. ciliata* var. *filifolia*, which, however, is much less in stature, with dull foliage, definitely pedunculate inflorescences held well above the leafy shoots beneath them, and somewhat larger, broader corollas.

In the perennial borders of the Missouri Botanical Garden, *A. Hubrichtii* has proved to be a much more satisfactory plant than the "*A. tabernaemontana*" (frequently actually *A. illustris*) offered by many nurserymen. It is a neater plant of more refined growth, the foliage is ornamental, and the clearer blue flowers are displayed to better advantage. The Ozark phase of *A. ciliata* var. *filifolia* is also a satisfactory and long-lived border perennial with something of the grace of *Linum perenne*.

MISSOURI BOTANICAL GARDEN,
WASHINGTON UNIVERSITY,
ST. LOUIS, MISSOURI.

POTAMOGETON SPIRILLUS MAY GROW AS AN ANNUAL

W. C. MUENSCHER

THE small pondweed, *Potamogeton Spirillus* Tuckerman, is usually described as possessing stems "arising from slender forking rootstocks". During several seasons while observing seedlings of species of *Potamogeton* in the field, it was noticed that

P. Spirillus growing in Oquaga Lake, Broome County, New York, had neither rootstocks nor winter buds at the base of the plants. Field studies in 1941 and 1942 disclosed that the plants started from seeds germinating in early May and matured fruits by August and September of the same year. During this entire period the plants retained the primary root even though some adventitious roots developed from the lower nodes of the more or less erect stem. The shell of the old "seed" remained attached at the junction of the base of the stem and primary root.

A search made in early spring and at intervals later failed to reveal a single plant that had started from overwintered structures and not a single plant was found with a rootstock; all had primary roots and seeds attached at the base. Apparently, in this locality, *P. Spirillus* performs as an annual. Oquaga Lake is a clear, cold, spring-fed lake. The *P. Spirillus* grows in 1 to 2 meters of water. Specimens taken July 2, no. 20631, and September 6, 1941, no. 20632, have been deposited in the herbarium of Cornell University.

Since this species is known to have rootstocks or at least more or less horizontal stems with roots at the nodes, an examination was made of all the specimens in the herbarium of Cornell University to determine whether any of them indicated the annual habit. The following sheets of *Potamogeton Spirillus* collected in New York State, all contain fruiting plants with the primary root and pericarp of the germinated "seed" (nutlet), still intact:

Upper Chateaugay Lake, Clinton Co., September 11, 1930, Muenscher and Bassett Maguire, no. 744; on sandy bottom, growing with *Potamogeton Vaseyi* in Millsite Lake, Jefferson Co., July 10, 1931, Muenscher and Maguire, nos. 1624 and 1625; Cheyney Pond, Essex Co., August 23, 1932, Muenscher and A. A. Lindsey, no. 2846; Sacandaga Lake, Hamilton Co., July 26, 1932, Muenscher and Lindsey, no. 2855; Cayuta Lake, Schuyler Co., July 5, 1931, Muenscher, no. 17548 and August 9, 1933, Muenscher and V. M. Lefler, no. 18252. In addition, a sheet of plants collected August 11, 1911 (Fernald and Wiegand 4492), in Rushy Pond, in Newfoundland also has specimens with the primary root and the old "seed" still attached.

Most students of Potamogetons, either by direct statement or implication, treat them all as perennials. *Potamogeton Spirillus* under some conditions at least grows as an annual.

DEPARTMENT OF BOTANY,
CORNELL UNIVERSITY